REMARKS/ARGUMENTS

Claims 31 and 32 are rejected under 35 U.S.C. 112 as failing to comply with the written description requirement and as being indefinite. Claims 1-8, 11-18, 21-28, and 31-32 are rejected under 35 U.S.C. 102(a) and 35 U.S.C. 102(e) as being anticipated by Bonomi et al. (U.S. Patent No. 6,396,834). Claims 10, 20, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonomi et al. in view of Radhadrishanan et al. (U.S. Patent No. 6,049,526).

Applicants hereby amend claims 1, 11, and 21 to more fully define the scope of the claimed inventions. Support for amended claims 1, 11, and 21 is found throughout the application and, in particular, at pages 24-27. Additional support is provided by Figs. 4-6 of the drawings. Claims 31 and 32 are amended to clarify claim language. Claims 3, 6, 7, 13, 16, 17, 23, 26, and 27 are amended to conform to their amended base claims and to correct minor typographical errors. No new matter is presented by the amended claims. Applicants respectfully request reconsideration of all pending claims in view of the amendments above and the remarks below.

Rejections under 35 U.S.C. §112

Claims 31-32 are rejected under 35 U.S.C. §112 as containing subject matter not described in the specification based upon inclusion of the words "round robin sequential fashion." Applicants respectfully traverse the rejection and submit that the claimed limitation is fully supported according to its ordinary meaning in the relevant art. As defined in the Microsoft Press Computer Dictionary, "round robin" means "a sequential, cyclical allocation of resources to more than one process or device." (Microsoft Press Computer Dictionary, Third Edition (1997). Redmond: Microsoft Press). Thus, in context, the claim language describes a sequential, cyclical allocation of credits to ready network connections.

Applicants submit that allocating credits in a sequential, cyclical fashion is fully supported by the previously cited portions of the specification. Specifically, page 28 describes allocating credits to a ready network connection at the head of the Scan List, decrementing its frequency count, and then moving the connection to the tail of the Scan List. This process is

repeated as each connection, in turn, reaches the head of the Scan List. When its frequency count is zero, a connection is moved from the Scan List to the Spent List. Eventually, all connections are moved to the Spent List. At that time, as described on page 25, pointers to the two lists are swapped over and another round of bandwidth allocation begins. The allocation process is therefore both sequential (connections advancing through the Scan List) and cyclical (swapping pointers when the Scan List becomes empty). Accordingly, Applicants respectfully request that the 35 U.S.C. §112 written description rejection of claims 31-32 be withdrawn.

Claims 31-32 are also rejected under 35 U.S.C. §112 as being indefinite based upon inclusion of the word "substantially" in the claim language. Applicants respectfully assert that the meaning of "substantially" is clear in this context. However, in the interest of expediting prosecution, the relevant part of claims 31-32 are amended and the word "substantially" is removed. Applicants therefore request that the rejection of claims 31-32 under 35 U.S.C. §112 on grounds of indefiniteness be withdrawn.

Rejections under 35 U.S.C. §102(a)/(e)

Claim 1

Claim 1 is amended to more fully describe the system of credits included as part of the claimed invention. As amended, claim 1 recites, among other features, "allocating credits to ready network connections in the plurality of network connections... determining a chosen data unit to be transmitted to an output channel from a first connection ... wherein the step of determining the chosen data unit depends on credit of the first network connection; transmitting the chosen data unit to the output channel; and adjusting the credit of the first connection based upon the data unit transmitted." Thus, credits are allocated to a network connection and later used in the process of transmitting data units from the connection. This system of credits enables bandwidth to be allocated among ready network connections in a flexible manner. For example, as described on pages 26-27 of the specification, bandwidth credit is spent as data units are transmitted. A network connection may become ineligible to transmit if it has insufficient credits. However, in some situations, a connection may utilize more credits than it has

accumulated. In this case, the (debit) connection effectively borrows credits from other connections involved in the merge.

By contrast, Bonomi discusses a system in which bandwidth is allocated to cells in a connection by computing a "conformance time" for each cell. At lines 5-9 of column 14, Bonomi states, "Thus, the departure time of the prior cells may be stored for each connection. A scheduler uses these departure times to determine the conformance time of a later cell, and ensures that the later cell does not depart earlier than the computed conformance time." At lines 39-51 of column 14, Bonomi provides equations for calculating the conformance time.

Bonomi's time-based scheduling fails to disclose the system of credits recited in claim 1. Specifically, Bonomi does not teach or suggest "allocating credits to ready network connections ... determining a chosen data unit to be transmitted from a first connection ... wherein the step of determining the chosen data unit depends on credit of the first network connection ... and adjusting the credit of the first connection based upon the data unit transmitted to the output channel." Based upon the foregoing, Applicants respectfully request withdrawal of the rejection under §102(a)/(e).

Claims 2-10, 33

Claims 2-10 and 33 depend, directly or indirectly, from amended claim 1. These claims are therefore believed to be allowable for at least the reason that they depend from an allowable base claim. Accordingly, Applicants request that the rejection of these claims under §102(a)/(e) be withdrawn.

Claims 11-18, 20, 34

Claim 11 recites an integrated circuit for performing a virtual network connection merge. The integrated circuit of amended claim 11 contains controller circuitry configured to control operations of "allocating credits to each network connection...determining a chosen data unit to be transmitted to an output channel from a first connection ...wherein the step of determining the chosen data unit depends on credit of the first connection; transmitting the chosen data unit to the output channel; and adjusting the credit of the first connection based upon the data unit transmitted."

Applicants submit that claim 11 is allowable over Bonomi for at least the reasons cited in connection with claim 1 as Bonomi does not teach or suggest a system of credits used in connection with performing a virtual connection merge as recited in the claim language. Claim 12-18, 20, and 34 depend from claim 11 and derive patentability therefrom. Accordingly, Applicant respectfully request reconsideration and allowance of claims 11-18, 20, and 34.

Claims 21, 22-28, 30, and 35

Claim 21 recites a computer-readable medium for causing a processor to perform steps of "allocating credits to ready network connections... determining a chosen data unit to be transmitted to an output channel from a first connection ...wherein the step of determining the chosen data unit depends on credit of the first connection; transmitting the chosen data unit to the output channel; and adjusting the credit of the first connection based upon the data unit transmitted. "

Applicants submit that claim 21 is allowable over Bonomi for at least the reasons cited in connection with claim 1 as Bonomi does not teach or suggest a system of credits used in connection with performing a virtual connection merge as recited in the claim language. Claim 22-28, 30, and 35 depend from claim 21 and derive patentability therefrom. Accordingly, Applicant respectfully request reconsideration and allowance of claims 21-28, 30 and 35.

Claims 31-32

As set forth above, Bonomi fails to disclose a system of credits for use in performing a virtual network connection merge. Specifically, Bonomi does not teach or suggest "assigning a credit to each ready network connection in the plurality of network connections ... when a ready network connection is assigned credits at least equal to its relative frequency value, removing the ready network connection from the first list; continuing to assign a credit to each ready network connection in the plurality of network connections ... determining a chosen data unit to be transmitted to an output channel from a ready network connection ... wherein the step of determining the chosen data unit depends on credit of the ready network connection; and transmitting the chosen data unit to the output channel" as recited in claim 31. Claim 32 depends

from claim 31 and therefore includes all of its limitations. Accordingly, Applicant respectfully request reconsideration and allowance of claims 31-32.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

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